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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/696,626

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Bala Ramachandran

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EXAMINER

WONG, LINDA

ART UNIT

PAPER NUMBER

2634

DATE MAILED: 12/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/696,626

Applicant(s)

RAMACHANDRAN ET AL.

Examiner

Linda Wong

Art Unit

2634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 September 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 9/26/2005 have been fully considered but they are not persuasive.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. **Claims 1,11,21** are rejected under 35 U.S.C. 112, first paragraph, a as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The examiner cannot determine the added limitations to claim 1,11 and 21 due to the lack of further description in the specification. The limitations recites "... processing the second baseband signal using the baseband components, where processing the first baseband signal and the second baseband signal comprises selectively filtering and selectively DC-offset correcting the first and second baseband signal."

Referring to the drawings, Figures 2,4-5 show that the common baseband component 212a-c filters and DC corrects the signals. There is no show of an

optional filter and DC correction or a selective or alternate path showing the next process of implementation if the DC offset correction and filter is not performed.

Furthermore, the specification indicates the elements found in the common baseband component are shared amongst the type of reception modes. On page 7, paragraph [0023], lines 5-6, the specification states the common baseband elements are shared and reused between CDMA and DBS modes. On page 8, paragraph [0023], lines 1-3, the specification states "the low pass filter cut-off frequency (LP filters 214, 228, 220, and 232) as well as the DC-offset loop corner cut-off (224 and 238) are switched between CDMA and DBS modes." This indicates the baseband elements are used for both CDMA and DBS modes but only one mode is processed at one time. On page 13, paragraph [0035], lines 12-15, the specification states "... the common baseband section 212b can process signals received in any of the modes (e.g., CDMA, GPS, PCS or DBS) using shared components, some of which are adjusted to accommodate the various frequency responses for the respective modes." The specification indicates the common baseband section processes signals received depending on the mode in which received using common elements or shared elements.

The limitations can read on the DC-offset and filters having switchable bandwidths as stated in the specification, however, the recited limitations does not recite a selective or switchable bandwidth, thus such a description does not effectively explain the limitations of "selectively filter[ing] and DC-offset correction". On page 7, paragraph [0022], lines 5-10, the specification describes the

functionality of the low pass filters 214 and 228 and DC correction elements as having switchable bandwidths.

Claim Rejections - 35 USC § 102 or 35 USC § 103

3. **Claims 1,2,5,8,11,14,16,20-22,25,27** are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Isberg et al (US Patent No.: 6029052).
 - a. **Claim 1**, Isberg et al discloses receiving a signal (Fig. 2, label 10) comprising converting a first signal based on a first system (Fig. 5, label GSM) to a first baseband signal (Fig. 2, label 44), converting a second signal based on a second system (Fig. 5, label DCS) to a second baseband signal (Fig. 2, label 44), processing the first baseband signal using baseband components (Fig. 2, labels 44) and processing the second baseband signal using the baseband components (Fig. 2, label 44). Regarding the new additional limitations, due to the 35 USC 112 rejection and new matter issue as stated above, the new limitations can be view in two ways. The first way is, as stated in the specification, the system selectively chooses a band or type of communication mode. Regarding such an interpretation of the new limitations, Isberg et al discloses a band splitter for selecting a band mode. (Fig. 2, labels 30 and BandSelect) The second way the new limitations can be interpreted is filtering and correcting DC-offsets occasionally or selectively or having an optional filter

and DC offset correction. Regarding such an interpretation of the new limitations, it would be obvious to one skilled in the art, based on design choice, to have an optional or constant filter. It would be obvious to one skilled in the art, based on design choice and inherency of the system, to correct the DC-offset. The system would inherently not correct the DC-offset if the no DC-offset was found. Furthermore, it would be the designer's choice to detect if an error has occurred or not to eliminate unnecessary processing and correcting so to reduce processing cost.

- b. **Claim 2, 14, 22**, Isberg et al discloses a multi-mode receiver for processing baseband signals of global System for Mobile Communication (GSM), Personal Communication Systems (PCS) and Digital Communication Systems (DCS). (Fig. 5, labels GSM, DCS, and PCS)
- c. **Claims 5, 16, 25**, Isberg et al disclose a multi-mode receiver that processes modes at different frequencies, wherein each mode inherently has different frequency response characteristics. (Fig. 5, labels GSM, DCS, and PCS)
- d. **Claim 8**, Isberg et al discloses a plurality of systems and inherently, discloses receiving a plurality of signals since the receivers continuously receives signals produced from any of the types of systems. (Fig. 2)
- e. **Claim 11** inherits all the limitations of claim 1.
- f. **Claim 20** inherits all the limitations of claim 8.

- g. **Claim 21** inherits all the limitations of claim 1, but claim 1 does not recite a means for transmitting and receiving. Isberg et al discloses a means for transmitting and receiving. (Fig. 5, label 10)
- h. **Claim 27** inherits all the limitations of claims 21 and 20.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

- 4. **Claims 3,4,6,7,9,10,15,17,18,19,23,24,26** are rejected under 35 U.S.C. 103(a) as being unpatentable over Isberg et al (US Patent No.: 6029052) in view of Peterzell et al (US Patent No.: 6694129).
 - a. **Claim 3, 23**, Isberg et al discloses a baseband processor comprising well know components, but Isberg et al does not disclose the well known components. Peterzell et al discloses a baseband processor (Fig. 4, label 230), which can comprise the following: a filter, DC cancellation, amplifier, and sampling. (Col. 7, lines 54-60) Since the baseband processor disclosed by Isberg et al are well known, it would be obvious to one skilled in the art to provided the possible components found in Peterzell et al's baseband processor.
 - b. **Claims 4, 24**, Although Isberg et al does not teach a processor with at least one of a digital domain and an analog domain, Peterzell et al disclose an analog

domain and a digital domain. (Fig. 5, before ADC, domain is analog, after ADC, domain is digital) It would be obvious to one skilled in the art to provide an analog domain in which the received signal can be processed to eliminate interference and noise and a digital domain so that the signal can be transmitted.

- c. **Claims 6, 7, 10, 15, 17, 19**, Although Isberg et al does not disclose the components in the baseband processor, Peterzell et al discloses a baseband processor comprising DC cancellation, matched and jammer filtering, which can be low-pass, all-pass, high-pass filters, finite-impulse response filters or smoothing filters, automatic gain controllers (AGC), and decoding into digital data or auto streams. (Col. 7, lines 54-60) It would be obvious to one skilled in the art to build a system containing these components to eliminate interference and correct deficiencies within devices such as A/D converter.
- d. **Claim 9,18**, Although Isberg et al does not disclose the components within the baseband processor (Fig. 2, label 44), Peterzell et al discloses possible components within their baseband processor (Fig. 4, label 230), wherein the baseband processor comprises sample decimation. (Col. 7, lines 54-60) Since the system disclosed by Isberg et al and Peterzell et al discloses processing baseband signals of different frequencies or mdoes, it is inherent that the sampling rates found in the baseband processor would vary to accommodate the Nyquist theorem.
- e. **Claim 26** inherits all the limitations of claim 18.

5. **Claims 12 and 13** are rejected under 35 U.S.C. 103(a) as being unpatentable over Isberg et al (US Patent No.: 6029052) in view of Robinett (US Publication No.: 20020193108).

a. **Claims 12 and 13**, Although Isberg et al does not teach two down-converters, Robinett discloses a multi-mode transceiver comprising a baseband processor (Fig. 3A-2, label 310), wherein two down-converters (Fig. 3A-2, labels 442 and 446), with different sampling rates (Fig. 3A-2, labels 444a and 444b) are within the baseband processor. It would be obvious to one skilled in the art to use a down-converter to lower the sampling rate and increase the frequency.

6. **Claims 28-33** are rejected under 35 U.S.C. 103(a) as being unpatentable over Isberg et al (US Patent No: 6029052) in view of Peterzell et al (US Patent No.: 6694129).

a. **Claim 28**, Although Isberg et al does not disclose a digital-broadcast system that shares the common baseband processor, Peterzell et al discloses a multi-mode receiver processing CDMA signals as well as GPS, GSM, etc. using a common basband processor. (Fig. 4, label 230 and Col. 7, lines 54-60)
Although Peterzell et al does not explicitly disclose processing digital broadcasted signals, broadcasted signals can be processed using CDMA components. A digital broadcasting system comprised of one transmitter and multiple receivers. (Goldsmith, Slide 2 and Google Definition: Broadcast)
Goldmsmith discloses in her lecture, the use of code division to process signals

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from a broadcast channel. (Goldsmith, Slide 3) It would be obvious to one skilled in the art to use CDMA components to process DBS signals since signals produced from broadcasting can be deciphered by generating a PN code that would decode the signal.

- b. **Claims 29 and 31** inherit all the limitations of claim 7.
- c. **Claim 30** inherit all the limitations of claim 7, but claim 7 does not recite an inclusion of switchable bandwidths within an LPF and DC-correction element. Isberg et al disclose a multi-mode receiver that processes different modes with different frequency responses. (Col. 3, lines 42-45) Since each mode uses a different frequency, it would be inherent that the bandwidths use to process each mode must change. It would be obvious to one skilled in the art to include switchable bandwidths to follow the criterias of the Nyquist theorem, which would prevent aliasing.
- d. **Claims 32 and 33** inherit all the limitations of 7 and 10. Although Isberg et al and Peterzell et al does not disclose using varying sampling rates, the systems disclosed by Isberg et al and Peterzell et al are multi-mode systems, it is inherent that the sampling rates used are different and the frequency response would be different for each of the systems.

Conclusion

- 7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

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§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


8. A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Linda Wong whose telephone number is 571-272-6044. The examiner can normally be reached on 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on (571) 272-3056. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Linda Wong


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